

System and Method for One-Time Programmed Memory Through Direct-Tunneling Oxide Breakdown

Abstract

Sub C.16

5 A one-time programming memory element, capable of being manufactured
in a $0.13\mu\text{m}$ or below CMOS technology, having a capacitor, or transistor
configured as a capacitor, with an oxide layer capable of passing direct gate
tunneling current, and a switch having a voltage tolerance higher than that of the
capacitor/transistor, wherein the capacitor/transistor is one-time programmable
10 as an anti-fuse by application of a voltage across the oxide layer via the switch
to cause direct gate tunneling current to thereby rupture the oxide layer to form
a conductive path having resistance of approximately hundreds of ohms or less.

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